The Neglected Goat

A new method to assess the role of the goat in the English Middle Ages

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1 Introduction and background

1.1 Research questions and book structure

'Many historical essays and books begin with the claim that their subject has been neglected, but in the case of the medieval goat this really is the case. The evidence is scattered and thin, and although historians and archaeologists have devoted some space to this animal there is no study of any length' (Dyer 2004: 20).

The study of the goat (*Capra hircus*) has been largely disregarded by British archaeologists, and this neglect is due to a number of different reasons. In part it is a methodological problem, related to the difficulty of distinguishing goat remains from those of the more common sheep (*Ovis aries*). At the same time, the relative scarcity of this species in the archaeological records for the Middle Ages (*c.* 1066-1500 AD) has contributed to the perception that this animal was not important, and therefore not worth analysing in detail.

There are in fact, various important historical and archaeological questions related to the medieval goat that call for an answer, but their understanding is dependent on our ability to identify goat bones accurately. Both historical (Dyer 2004) and archaeological (Albarella 1997) sources indicate a gradual decline of this species in the course of the Middle Ages. Although some hypotheses for this decline have been raised, the dynamics, extent and timing are still far from understood. In addition, from the study of English medieval bone assemblages an intriguing pattern emerges; on the one hand, a scarcity of goat bones and teeth is recorded but, on the other, there is a much greater abundance of horncores. This has led to different hypotheses, such as the possibility of an international trade in goat skins (Albarella 2003). In more general terms, the overall role that the goat played in English medieval husbandry is still far from clear. The goat is, for instance, more commonly recorded in the 11th century Domesday Book than one would expect from its occurrence in the archaeological record (Albarella 1999). Whether the reason behind this discrepancy is due to an overestimation in the written sources, or an under-recording of goat bones by zooarchaeologists, is unclear.

Medieval bone assemblages have been studied by a wide variety of researchers, each possessing highly variable skills in identifying goat bones, and also at different times when different identification criteria were available. The most commonly used morphological criteria for sheep/goat postcranial identification were published over 40 years ago (e.g. Boessneck 1969; Boessneck *et al.* 1964; Kratochvíl 1969), but identification methods based on teeth are much more recent (Halstead *et al.* 2002; Payne 1985). All these criteria have recently been subjected to various refinements and verifications (e.g. Fernàndez 2001; Fernàndez 2002; Zeder and Lapham 2010; Zeder and Pilaar 2010).

Despite these contributions, problems still affect the ability of zooarchaeologists to correctly differentiate the two species. For instance, many of the adopted criteria have been established by analysing goat specimens from many different parts of the world, and not all of them necessarily apply to British populations. A further problem is that many criteria are based on morphological differences whose assessment may be highly subjective (visibility and reliability of known morphological traits vary according to different factors: breed and age of the animals, ability and experience of the observer, as well as the completeness of reference collections). In addition, since archaeological reports often include the two taxa (sheep and goat) in a single sheep/goat category, with no or little attempt to separate the

two, it is very difficult to compare sites reliably and also get a realistic overview of the importance of the goat in different regions and at different times in England.

A review of the literature concerning the role that the goat played during the Middle Ages in England, have led to the formulation of the following aims for this study:

1. To determine to what extent the published morphological criteria generally used for the separation of sheep and goat bones are applicable to breeds and populations from England.
2. To establish the degree of influence of factors such as sex and age on the visibility and reliability of morphological criteria.
3. To translate morphological features into biometrical indices, focusing, as much as possible, on central and northern European modern animals.
4. To provide a baseline of modern sheep and goat morphometric data useful to zooarchaeologists.
5. To provide a new methodology based on morphometry, which will:
    I. represent an objective tool for the identification of sheep and goat archaeological bones;
    II. have the potential to be applied beyond the Middle Ages as an additional *Ovi*s and *Capra* identification tool.
6. To start a re-assessment of the role that the goat played during the Middle Ages in England by re-analysing a number of English medieval sheep and goat bone assemblages with a proposed new methodology.
7. To reconsider the hypotheses regarding the potential trade in goat horns and skins with the continent during the medieval period.

1.1.1 Description of the structure of this book

This book is divided into two correlated parts: Part I (Chapters 1 and 2) focuses on the development of a new methodology through the study of modern sheep and goat material. Part II (Chapters 3 and 4) presents the application of such new methodology on a number of English medieval sheep and goat assemblages, thus assessing the reliability of previous identifications and estimating the abundance of the goat in such case studies.

Chapter 1 of the book contains:

- an opening section on taxonomy;
- the methodological background in order to contextualise the research questions of the study. In this same section the limits of previous approaches (morphological, biometrical and bio-molecular) are highlighted and the benefits of the proposed new methodology are discussed;
- an evaluation of the historical and archaeological issues regarding the goat in medieval England, beginning with a consideration of the evidence from written sources. The archaeological evidence follows, and an overview of the relative frequency of goats during the Middle Ages is provided. A brief explanation of the main hypotheses concerning the decline of the goat is also included, followed by the analysis of the anatomical representation of this animal in medieval archaeological assemblages.

Chapter 2 of the book contains:

- an in-depth description of the methods and materials. The morphological traits selected from published literature are presented along with the measurements which form the new recording protocol;
- a description of the modern sheep and goat specimens making up the modern samples with the full set of information such as age, sex, breed and degree of completeness;
- the results of the Inter and Intra-Observer Error trial, conducted to verify the replicability and reliability of the measurements included in the new recording protocol;
- the presentation of the results from the analysis of the modern material which includes A) the study of the reliability of the chosen morphological traits, leading to a proposed short-list of the most diagnostic and reliable traits; B) the results of the biometrical analysis which includes linear measurements and biometrical indices as well as statistical analysis (Mann-Whitney U test, Manova test, Discriminant Analysis and Principal Component Analysis);
- general considerations about the results obtained from the application of the new methodology on modern material.

Chapter 3 focuses on the application of the new methodology to a number of medieval English archaeological sheep/goat assemblages. The first case study is the port and town of King's Lynn in Norfolk, the second case study is represented by the site of Flaxengate, Lincoln and the third and final case study is Woolmonger/Kingswell Street in Northampton. Only some key contexts have been chosen from the late two sites. For all case studies results are presented followed by a discussion of the level of success of the new methodological approach on the archaeological material. A section focusing on the re-assessement of the likely role that the goat had in medieval England in light of the presented results follows. The book then proceeds with an evaluation of how the research could be expanded and improved.

The book concludes with Chapter 4, which summarises the results obtained by this study.

1.2 Taxonomy

The domestic goat *Capra hircus*, belongs to the mammalian order Artiodactyla, suborder Ruminantia, family Bovidae, sub-family Caprinae, tribe Caprini, genus *Capra*. The sheep (*Ovis aries*) is also included in the tribe Caprini, and is therefore closely related to the goat.

The genus *Capra* includes several species (Corbet 1978; Corbet and Hill 1980 in Mason 1984: 87; Willson and Reeder 2005), as shown by Table 1.1.

Table 1.1 List of species of *Capra* with their common name.

Scientific Name	Common name
Capra aegagrus	the bezoar or wild goat, the animal which is recognized as the ancestor of the domestic goat
Capra ibex	the alpine ibex
Capra caucasica	the west Caucasian tur, sometimes regarded as a subspecies of *Capra ibex* (*C.i. severtzoi*);
Capra cylindricornis	the tur of the eastern Caucasus
Capra pyrenaica	the Spanish ibex or Spanish wild goat
Capra falconieri	the markhor
Capra nubiana	the Nubian ibex
Capra sibirica	the Siberian ibex
Capra wallie	the Wallia ibex